



HURTIGRUTEN

Astronomy Voyage



Dr Darren (Das) Baskill
Astronomer at the University of Sussex, UK

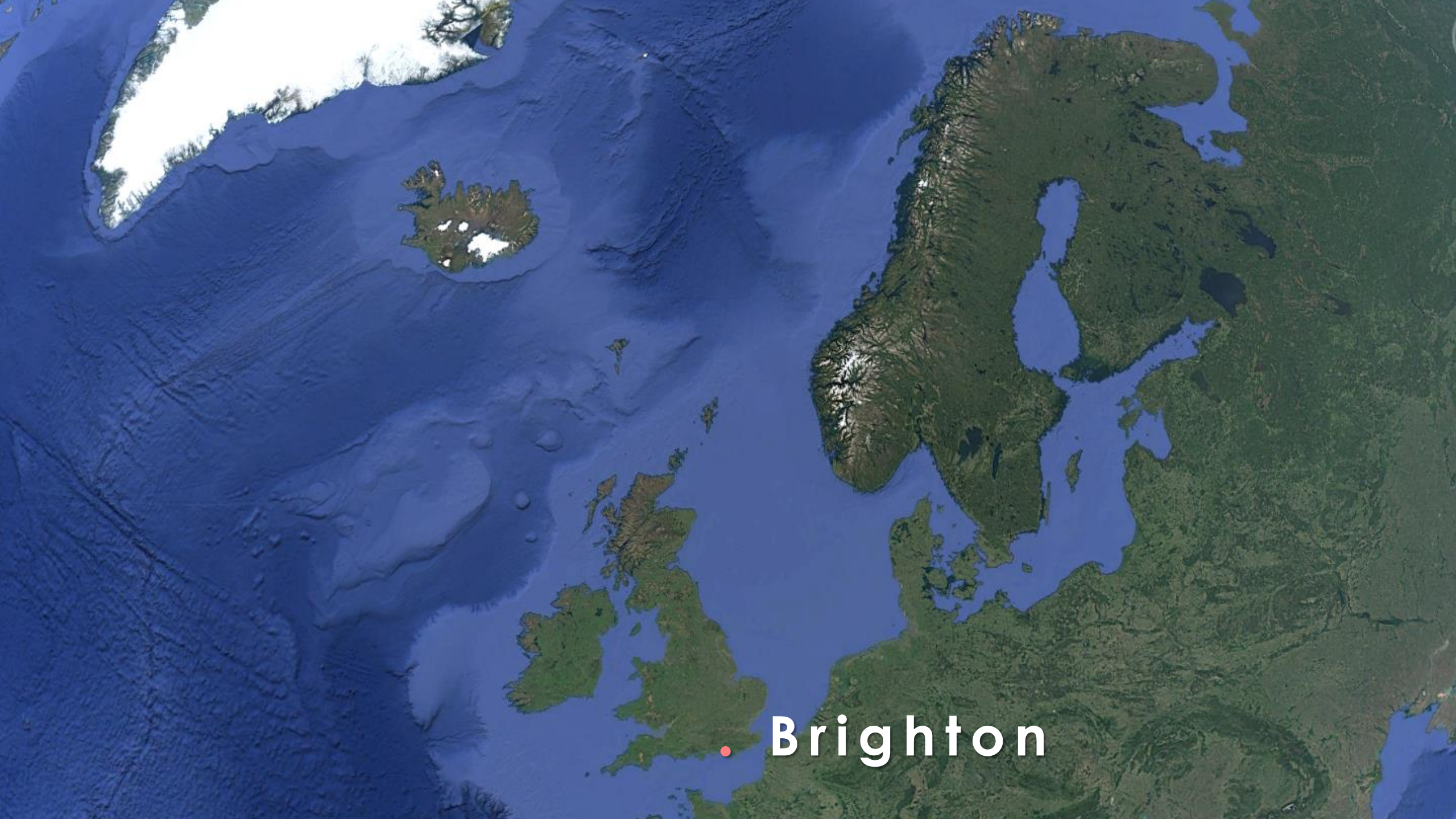
Welcome & Introduction



Dr Darren (Das) Baskill

Astronomer & lecturer in Physics & Astronomy
at the University of Sussex, Brighton, England





• Brighton

A satellite map of Southern England, showing the coastline and inland areas. The land is covered in green vegetation, with some urban areas visible. The sea is a deep blue. The word "London" is written in white text in the upper left, and "Brighton" is written in white text in the lower left, with a red dot marking the location of Brighton.

London

Brighton

WELCOME & INTRODUCTION

Lecturer in Physics & Astronomy
at the University of Sussex,
also running our outreach
programme.

Previous jobs include:

- Educator at the Royal
Observatory Greenwich
- XMM-Newton calibration scientist
- PhD in X-ray astronomy (CV stars)





Observing in Hawai'i...



Doing outreach in schools & elsewhere



Astronomy
without a telescope

Doing outreach in schools & elsewhere



Doing outreach in schools & elsewhere



Doing outreach in schools & elsewhere

MEDIA WORK



Aurora spotting in Kendal, northern England, May 10, 2024. Stop Press Media/Alamy

On 10 and 11 May 2024, large parts of the world were treated to their most spectacular display of the aurora – the northern and southern lights – in a generation. Thanks to modern cameras, the phenomenon was all over social media. It seems almost everyone knew someone who

Author



Darren Baskill
Lecturer, Physics and Astronomy,
University of Sussex



ROYAL OBSERVATORY GREENWICH



Astronomy Photographer of the Year

See the world's greatest space photography at the National Maritime
Museum

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LECTURE PROGRAMME

- Tonight's Night Sky
- Astrophotography
- The Aurora
- Our Solar System
- Our Galaxy
- Our Universe
- Modern Astronomy: Life as a
Astronomer & Tools of the Trade
- Why We Are Here: A 13.8-billion
year-old story



Tonight's Night Sky



Dr Darren (Das) Baskill
Astronomer at the University of Sussex, UK



Stellarium



TONIGHT'S NIGHT SKY: HIGHLIGHTS

- Jupiter & Mars
- The crescent Moon (from the 30th)
- Constellations such as Orion, Gemini, Leo, Ursa Major, Cassiopeia & Corona Borealis
- The Hyades & Pleiades star clusters
- The Orion nebula

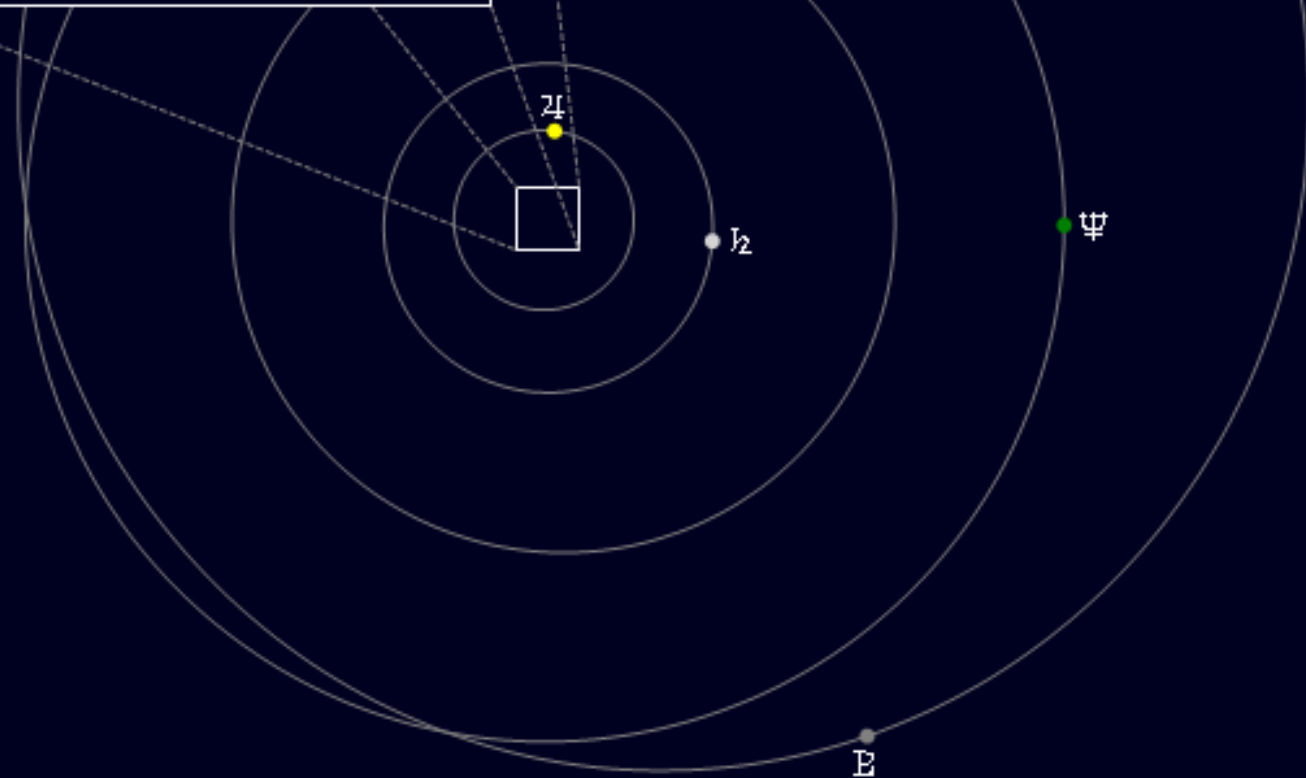
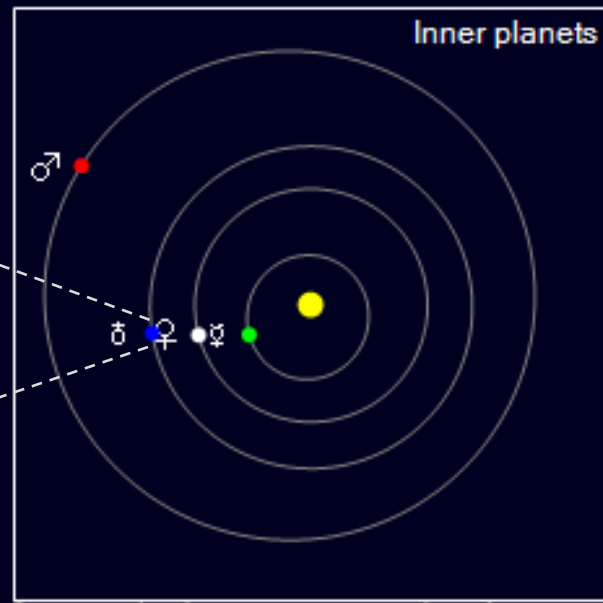


Our Solar System

As of 31st March 2025



Mercury	♿
Venus	♀
Earth	♁
Mars	♂
Jupiter	♃
Saturn	♄
Uranus	♅
Neptune	♆
Pluto	♇







100



What does this pattern of stars look
like to you?





URSA MAJOR.

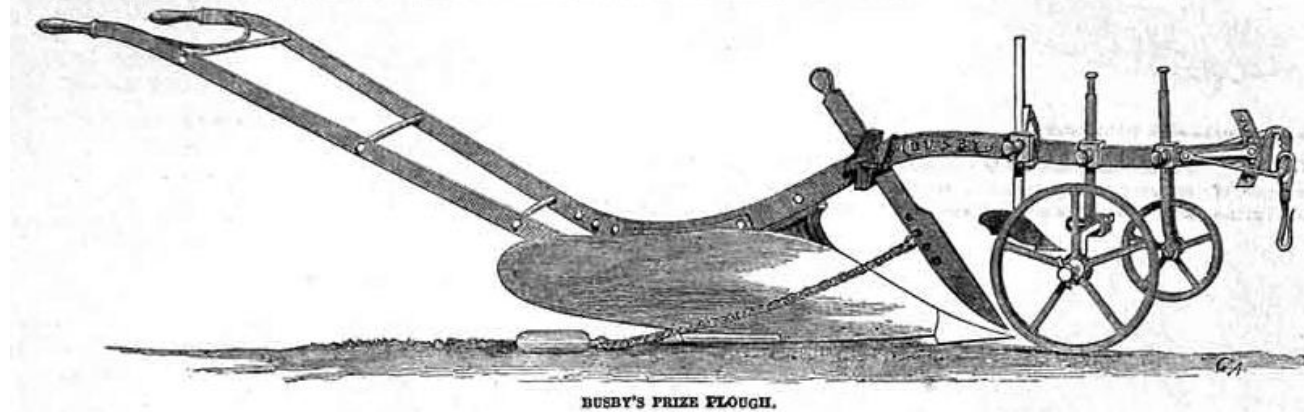
Pl. 9.



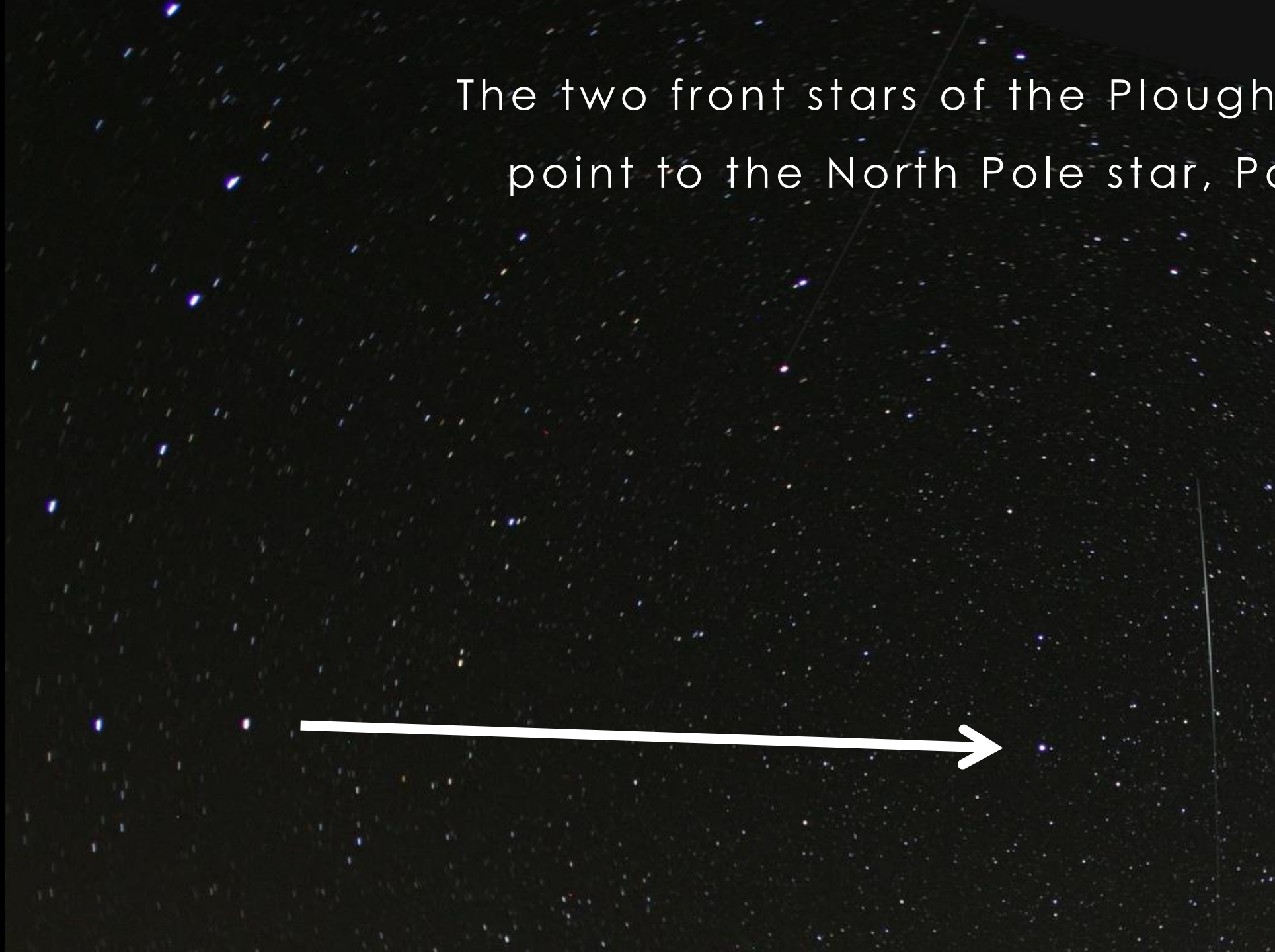
CONSTELLATIONS

Ursa Major is also known as...

- The Plough (UK)
- The Big Dipper (US)
- Charles' /Mans Chariot (Norway)
- The Great Wagon (Germany)
- The Saucepan (France)



The two front stars of the Plough
point to the North Pole star, Polaris



CONSTELLATIONS

Constellations are random collections of stars, made into patterns - like children playing join-the-dots games in books today.

The 88 constellations act as guides, or signposts, across the night sky (much like village, cities & place names act as a guide around Earth).





Look at Orions' sword/groin,
to find a gas cloud just with your eyes.



Arcturus

The plane of our solar system - the **ECLIPTIC**.

Mars

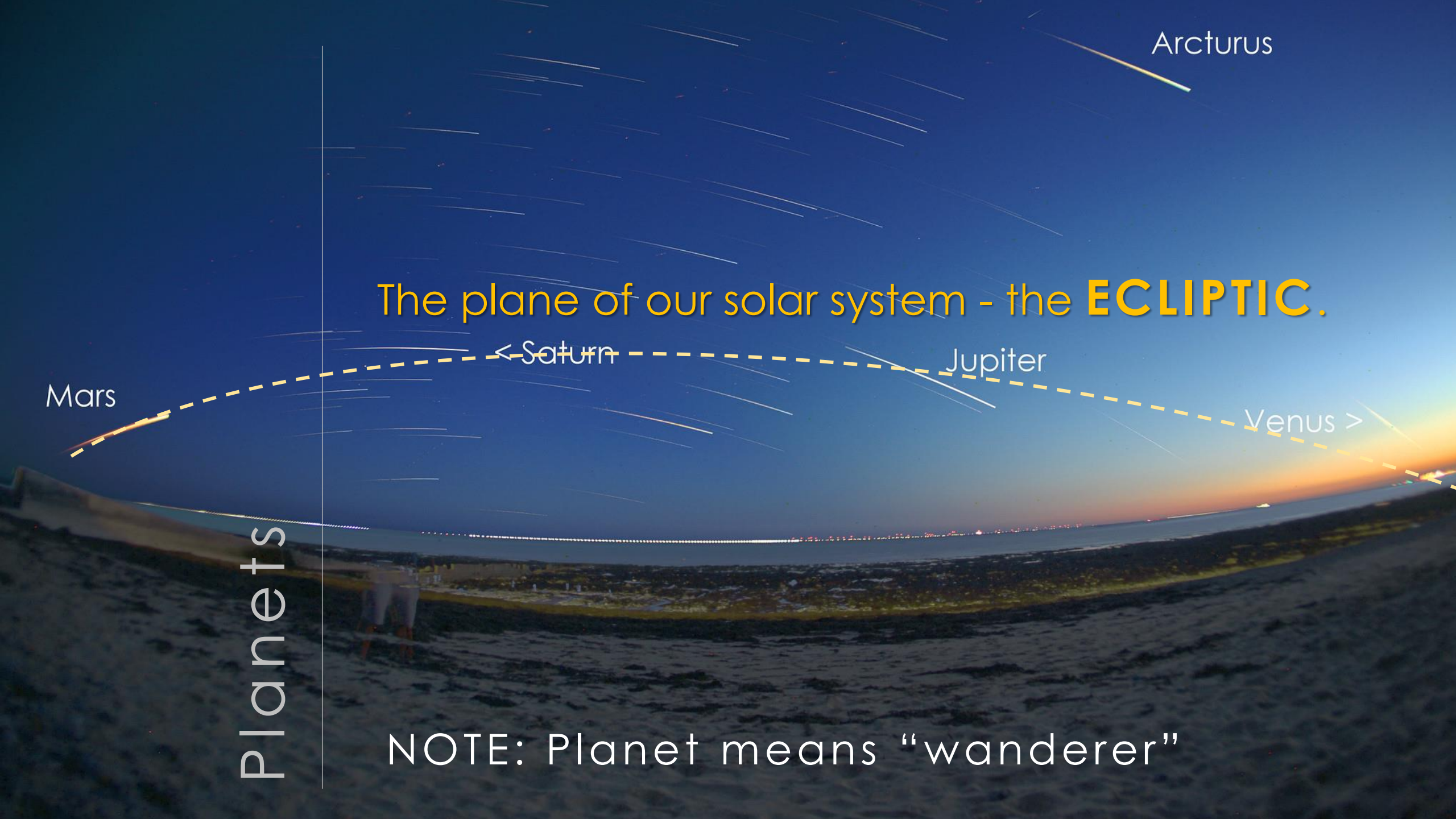
← Saturn

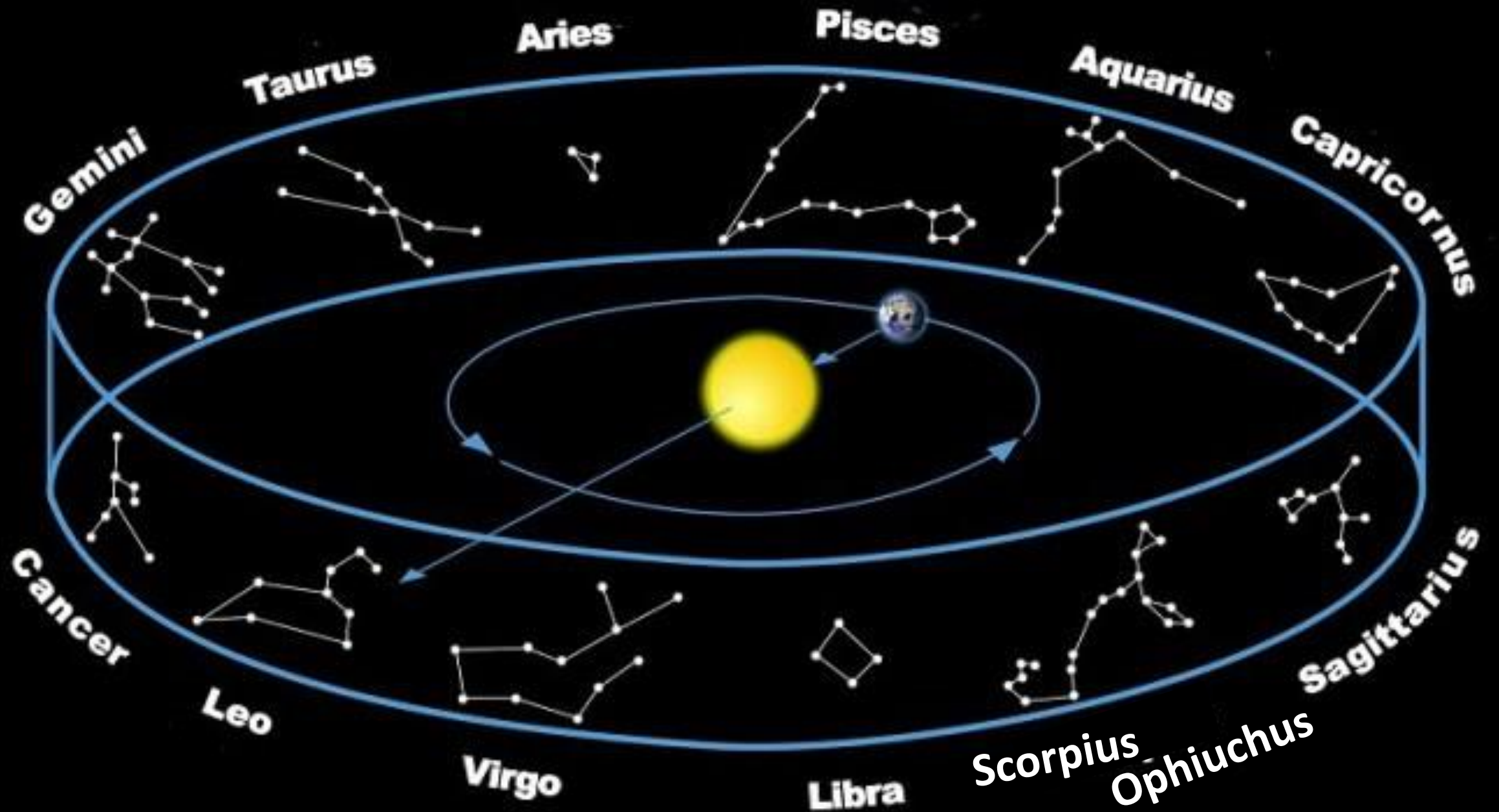
Jupiter

Venus >

Planets

NOTE: Planet means “wanderer”



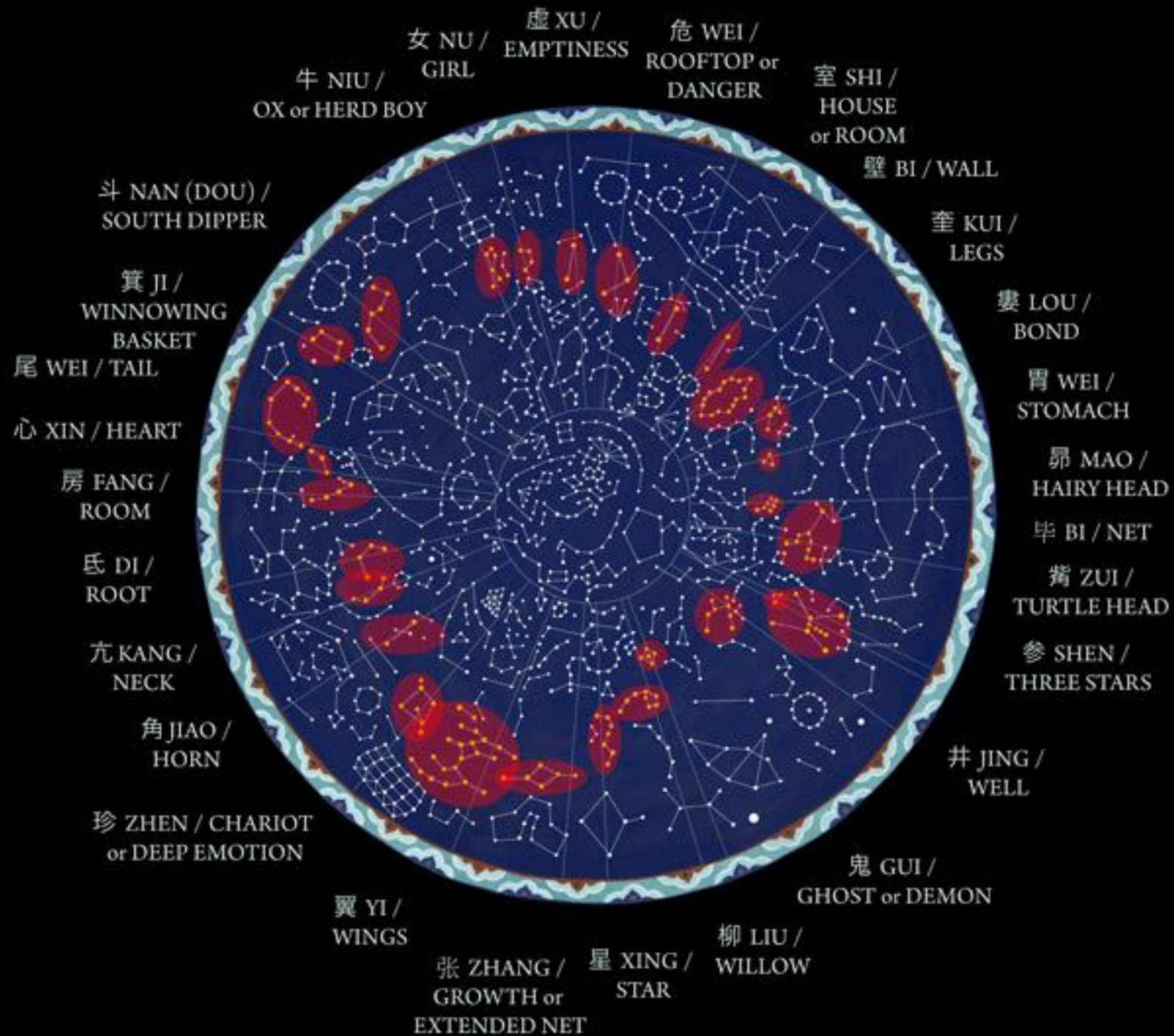


13 constellations form a band called the **Zodiac**

The Chinese divide
the sky into four
symbols and
28 mansions



Chinese Constellations

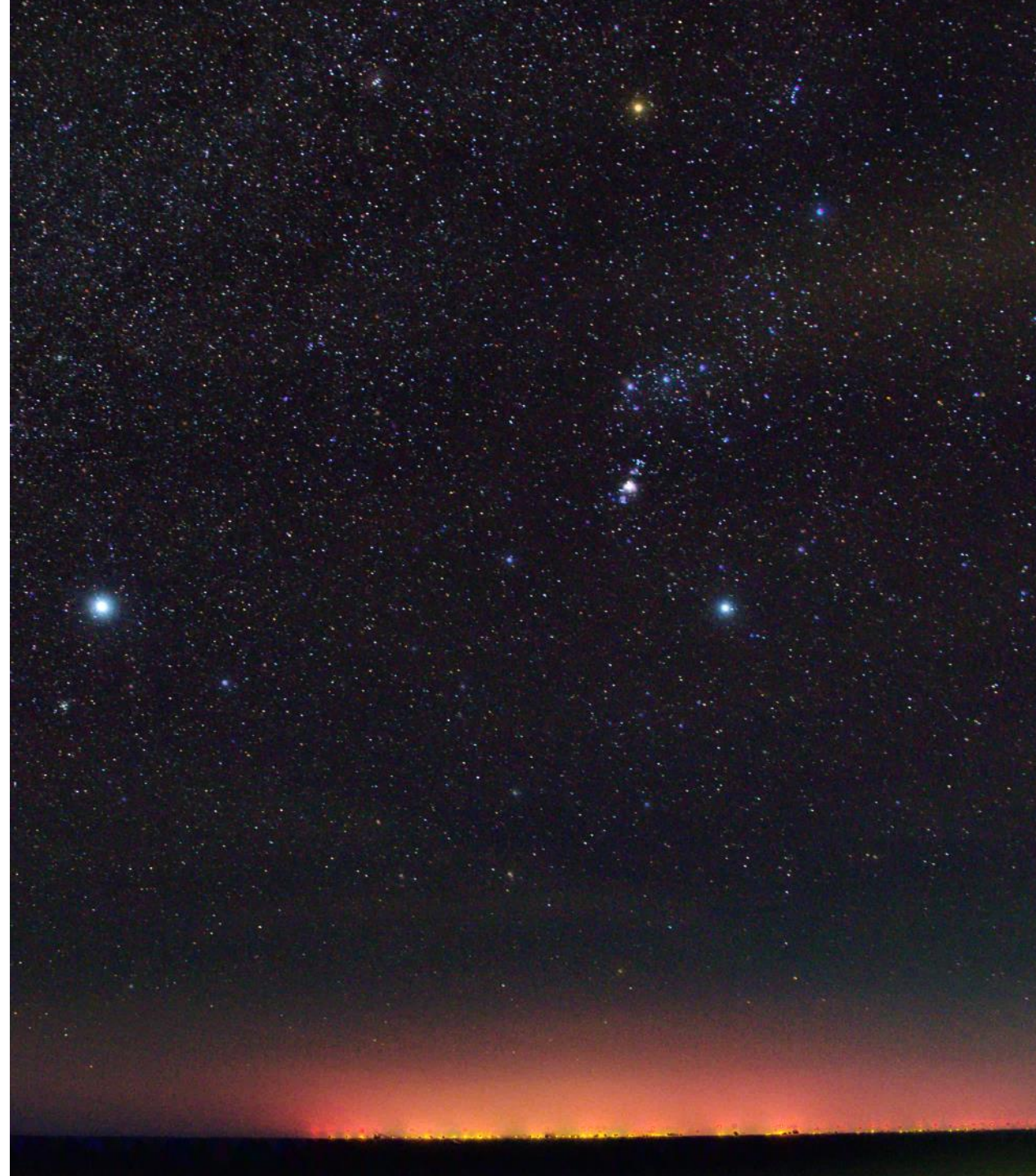


DISTANCES

Estimating the distances to stars is very difficult.

A faint nearby star looks the same as a brighter, more distant star.

In the constellation of Orion, which star is the most distant?



DISTANCES

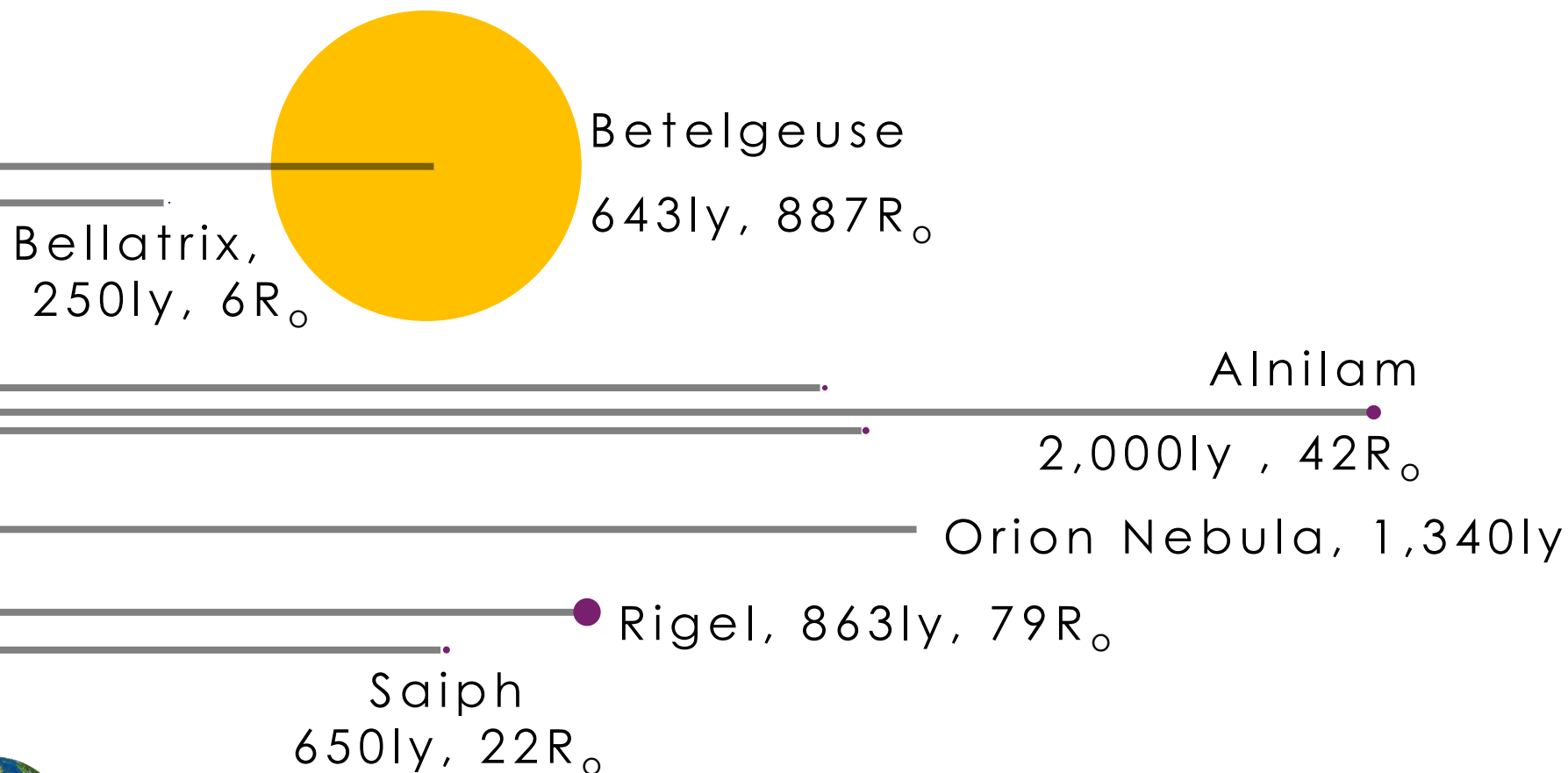
In 1838, FW Bessel used
parallax to measure
the distance to the
star 61 Cygni
as 10.4ly.

This single
measurement
increased the size of
the Universe by
10,000-fold!



DISTANCES

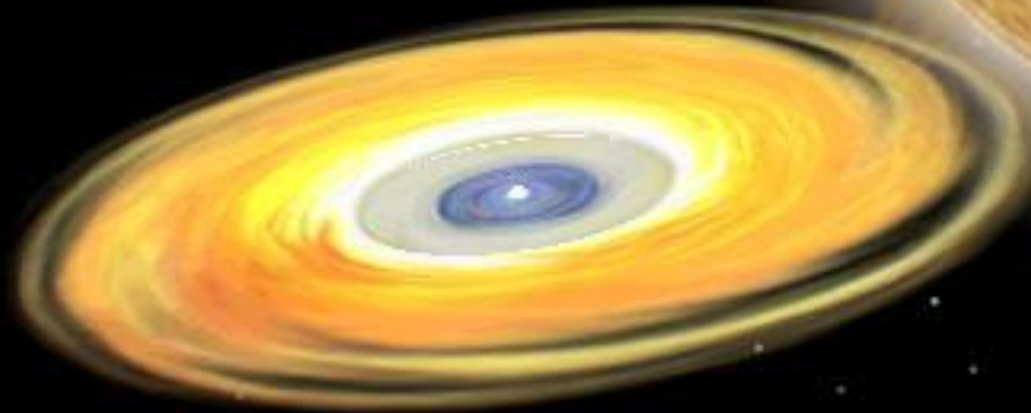
Distances to the stars in Orion



T Corona Borealis

Will it erupt this week?

Artistic impression: these binary stars are too close together to see them separately in a telescope.

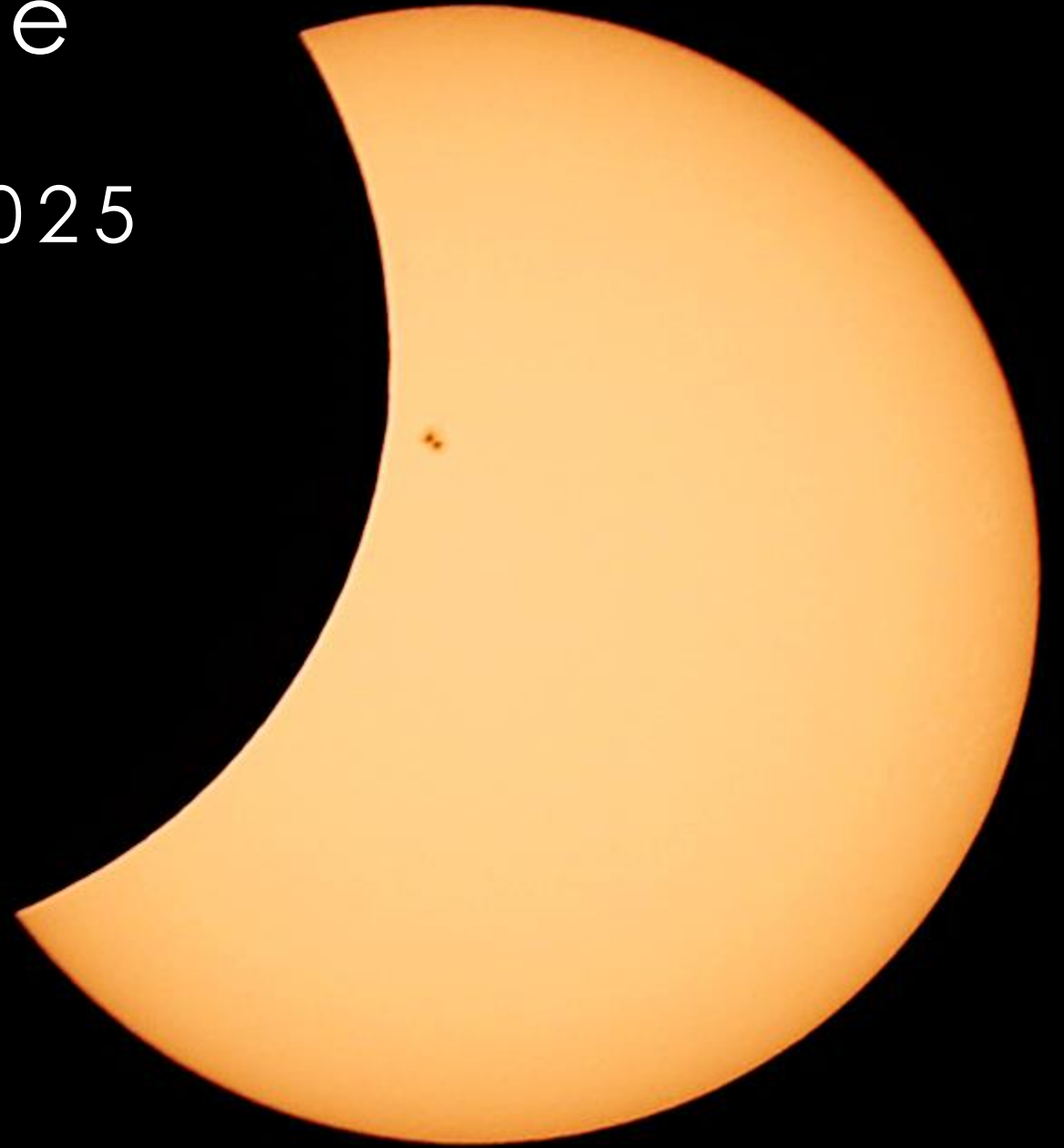


Partial Solar Eclipse

Saturday, 29th March 2025

11:30-13:20

Mid-eclipse ~12:20





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